

REMARKS**1. Drawing Objection:**

- 5 Figure 1 should be designated by a legend such as -Prior Art-because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawing
10 will not be held in abeyance.

Applicant's response:

- One page of proposed changes to the above-mentioned drawing,
15 Fig.1, has been provided to the Examiner to correct the informality noted on the above-identified Office action. Only two words "Prior Art" have been added to Fig.1. Consideration of the proposed change to Fig.1 is politely requested.

20 2. Objection to the specification:

The disclosure is objected to because of the following informalities: Page 6 line 29 change "shatter" to -shutter--. Appropriate correction is required.

25 Applicant's response:

- The word "shatter" in paragraph (0024), line 4, has been amended to "shutter". No new matter has been introduced into application by this amendment. Acceptance of the amended
30 specification is politely requested.

3. Claim Objection:

Claim 9 is objected to because of the following informalities:
Line 2 before "center" insert --the--. Appropriate correction
is required.

5 Applicant's response:

Claim 9 has been amended to correct the above-noted clerical
errors. Reconsideration of the amended claim 9 is politely
requested.

10

4. Claims Rejections-35 USC §112:

Claims 6, 10, 12 and 14 are rejected under 35 U.S.C. 112, second
paragraph, as being indefinite for failing to particularly
point out and distinctly claim the subject matter which
15 applicant regards as the invention.

The term "arch-wise" in claims 6, 10, 12 and 14 is a relative
term which renders the claim indefinite. The term "arch-wise"
is not defined by the claim, the specification does not provide
20 a standard for ascertaining the requisite degree, and one of
ordinary skill in the art would not be reasonably apprised
of the invention.

Applicant' Response:

25

Claims 6, 10, 12 and 14 are amended to overcome the
informalities noted in the above-identified Office action.
According to the specification of the present invention, page
4, paragraph [0020], line 1 to line 4, the retaining member
30 120 is an arc-shaped component with a ratchet side 122 in the
horizontal direction on an outer side of the retaining member
120 and a smooth side 124 with a sidewall of a guide groove

125 on an inner side of the retaining member 120 (as shown in Fig.2). Further, the ratchet side and the smooth side or the shape of the guide groove shown in Fig.2 to Fig.5 can be rearranged in other ways which can provide the retaining member
5 sliding path for rotating in a positive and a negative direction (page 9, paragraph [0032], line 1 to line 3). Therefore, corresponding amendments to the words "arch-wise" and related changes of claims 6, 10, 12, and 14 have been made. The amendments
10 of claims 6, 10, 12 and 14 are fully supported by the above-mentioned specification and drawings of the present invention. No new matter has been added. Reconsideration of the amended claims 6, 10, 12 and 14 is politely requested.

5. Claims Rejections-35 USC §103:

15 Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akimoto et al. (USPN 5680649)

In reference to claims 1, 3, 8, 9, 11, 13 and 15 Akimoto et al. discloses a camera with a focus retaining mechanism comprising:
20 a base, ref.1, having a cylindrical lens barrel, ref.2; a focusing lens mounted within the lens barrel, the focusing lens is moveable in a first or a second direction along an optical axis, col. 1 lines 55-59; a retaining member, ref.3, horizontally and movably mounted on the base for setting the
25 focusing lens in a predetermined position, wherein the retaining member comprises a ratchet side, ref. 3b, a smooth side, a first end, ref. 3c and a second end, ref.9b, positioned on opposite ends of the ratchet side and the smooth side, col.3 lines 23-27; and a retaining hook, ref.10 movably mounted on
30 the base, the retaining hook comprising a horizontal arm, which has a vertical end downwardly extending to hook the retaining member horizontally, see fig.2; wherein when the focusing lens

moves in the first direction, the vertical end of the retaining hook contacts the first end of the retaining member and then slides along the ratchet side, col.3 lines 45-48; when the focusing lens stops, the vertical end of the retaining hook
5 hooks the ratchet side and thus setting the focusing lens; when the focusing lens moves to the second direction, the vertical end slides back along the smooth side to the initial state, col.4 lines 10-34. Although Akimoto et al. dose not specifically mention a smooth it would be obvious to one of
10 the ordinary skill in the art to interpret the beginning of the cam, ref.3, as the smooth side.

In reference to claims 2, and 10 Akimoto et al. discloses wherein the horizontal arm and the vertical end of the retaining
15 hook are monolithically made from a flexible metallic wire, col.3 lines 45-47 and fig.2.

In reference to claims 4 and 5, Akimoto et al. further discloses a driving ring, ref. 11, mounted atop the retaining
20 member; and a connecting ring, ref. 13, (connecting ring) moveable mounted beneath the retaining member; wherein the driving motor urges the retaining member through the driving ring and the connecting ring, col.4 lines 51-57.

25 In reference to claims 6, 7, 12 and 14 Akimoto et al. discloses where the retaining member has a shape with the ratchet side and the smooth side located on the arch shape, see fig.2.

Applicant's Response:

30

Claim 1 of the present invention is repeated here for reference.

1. A camera with a focus retaining mechanism, comprising:

a base having a cylindrical lens barrel;

a focusing lens mounted within the lens barrel, the

5 focusing lens is movable in a first or a second direction along an optical axis;

a retaining member horizontally and movably mounted on the base for setting the focusing lens in a predetermined position, wherein the retaining

10 member comprises a ratchet side, a smooth side, a first end and a second end positioned on opposite ends of the ratchet side and the smooth side; and

a retaining hook movably mounted on the base, the retaining hook comprising a horizontal arm, which

15 has a vertical end downwardly extending to hook the retaining member in a initial state, moving substantially over the retaining member horizontally;

wherein when the focusing lens moves in the first

20 direction, the vertical end of the retaining hook contacts the first end of the retaining member and then slides along the ratchet side; when the focusing lens stops, the vertical end of the retaining hook hooks the ratchet side and thus

25 setting the focusing lens; when the focusing lens moves to the second direction, the vertical end slides back along the smooth side to the initial state.

30 Accordingly, a lens driving device 100 of the present invention comprises a base 102 having a cylindrical lens barrel 106, and a focusing lens 104 mounted within

the lens barrel 106 and movable in a first or a second direction along an optical axis. The lens driving device 100 further comprises a retaining member 120 with a ratchet side 122, a smooth side 124, a first end 126 and a second end 128 on opposite ends of the ratchet side 122 and the smooth side 124, and a retaining hook 130 with a horizontal arm 132. The retaining hook 130 has a downwardly extending vertical end, which can hook the retaining member 120 in an initial state, and move over the retaining member 120 horizontally. When the focusing lens 104 moves in the first direction, the vertical end of the retaining hook 130 contacts the first end 126 of the retaining member 120 and then slides along the ratchet side 122. When the focusing lens 104 stops, the vertical end of the retaining hook 132 hooks the ratchet side 122, thus setting the focusing lens 104. When the focusing lens 104 moves to the second direction 128, the vertical end slides back along the smooth side 124 to the initial state.

20

Compared with the present invention, the cited prior art, Akimoto et al., teaches a lens driving device comprising a shutter base plate 1, which is the base of the present invention, a lens barrel 2, which is the cylindrical lens barrel of the present invention, and a lens setting ring 3 similar to the retaining member of the present invention, but it apparently has no disclosure about a retaining hook comprising a horizontal arm with a downwardly extending vertical end, and the retaining hook that can move over the lens setting ring horizontally, so that the retaining hook can slide along the ratchet side of the lens setting

30

ring and hook the ratchet side while the focusing lens has been moved to a proper position for shooting (refer to Fig.1 of the cited prior art). The retaining hook and the operational relationship between the retaining hook and the retaining member are claimed limitations that are not present in the cited prior art.

More specifically, according to the cited prior art, in a lens initial state as shown in Fig.1, the spring 10 can only provide an urging force on a hold lever 9, not the lens setting ring 3 (refer to the specification of the cited prior art, column 3, lines 43 to line 48). And when a driving ring 11 rotates clockwise, the hold lever 9 is rotated against the urging force of the spring 10 by a cam portion 11a of the driving ring 11 (refer to the specification of the cited prior art, column 4, lines 17-21, and Fig.6). Thus, the spring 10 remains in contact with the second end 9b of the lever 9, providing the urging force on the hold lever 9 during the focusing procedure. Consequently, the spring 10, which is compared with the retaining hook of the present invention in the above-identified Office action, neither has the downwardly extending vertical end, nor moves over the lens setting ring 3 horizontally, so the spring 10 apparently can not slide along the ratchet side 3b of the lens setting ring 3 and hook the ratchet side 3b to set the focusing lens, as required by the instant claim 1.

30

Additionally, as the driving ring 11 starts to rotate clockwise, it is obviously impossible for the spring

10 to contact the first end 3c of the lens setting ring
3 and then slide along the ratchet side 3b according
to the above-mentioned specification of the cited prior
art. And when the lens setting ring rotates
5 counterclockwise, the spring 10 will not slide back
along the smooth side, which is the beginning of the
cam portion 11a according to the above-identified
Office action, to the initial state (refer to the
specification of the cited prior art, column 5, first
10 paragraph).

The cited prior art thus fails to meet all of the claimed
limitations of the present invention. Compared with the cited
prior art, claim 1 of the present invention is a new, useful,
15 and unobvious concept. Therefore, the applicant respectfully
requests reconsideration of claim 1 and claims 2-8 dependent
thereon.

Claim 9 of the present invention is repeated here for
20 reference.

9.A lens retaining device capable of positioning a focusing
lens, comprising:

25 a base having a cylindrical lens barrel vertically formed
at center part of the base for accommodating the focusing
lens;

a retaining member rotatably mounted on periphery of the lens
barrel for controlling the position of the focusing lens
in the lens barrel, the retaining member comprising a
30 ratchet side;

a first driving device for urging the retaining member to
rotate in a first direction;

a second driving device for providing a urging force for the retaining member to rotate in a second direction, wherein the first direction is a reverse direction of the second direction; and

5 a retaining hook for positioning and engaging with the retaining member when the retaining member rotates to a predetermined position in the first direction so as to resist the urging force provided by the second driving device that makes the retaining member rotate in the second

10 direction.

Claim 9 is similar to claim 1, and has also claimed the feature of the retaining hook 130 that can position and engage with the retaining member 120 when the

15 retaining member 120 rotates clockwise to a predetermined position, so as to resist the urging force provided by the second driving device 136 that makes the retaining member 120 rotate counterclockwise (refer to the specification of the present invention, page 6, lines 6-13, and Fig.2).

20 However, according to the prior art, when the lens setting ring 3 reaches a desired focus position, a rocking motor 8 is thereafter supplied with a voltage sufficient to keep an engagement between a tooth 6b and a hold pawl 7a or

25 7b (refer to the specification of the cited prior art, column 4, lines 43-47, and Fig.3). Thus, it is apparently not the spring 10 that hold the lens setting ring 3 when the lens setting ring 3 reaches a desired focus position.

30 The cited prior art thus fails to meet all of the claimed limitations of the present invention as iterated in claim 9. Compared with the cited prior art, claim 9 of the present

invention is a new, useful, and unobvious concept. Therefore, the applicant respectfully requests reconsideration of claim 9 and claims 10-15 dependent thereon.

Version with markings to show changes made

In the specification:

- 5 Replace paragraph number [0024] on page 6 with:

After the focusing lens 104 completes the action of focusing and retaining, the driving motor 140 reverses. At this time, the retaining member 120 and
10 the connecting ring 114 remain in the retained position, but the driving ring 110 is urged to rotate in an opposite direction so as to move a [shatter] shutter switch using another end 113 of the gear side 111 to complete a photographing action.

15

In the claims:

6. (Amended) The camera with a focus retaining mechanism according to claim 1, wherein the retaining member is
20 [arch-wise] arc-shaped with an [arc side on either its] inner side [or] and an outer side, and wherein the ratchet side and the smooth side are located on the [arc sides] inner side and the outer side.

- 25 9. (Amended) A lens retaining device capable of positioning a focusing lens, comprising:
a base having a cylindrical lens barrel vertically formed at the center part of the base for accommodating the focusing lens;
30 a retaining member rotatably mounted on periphery of the lens barrel for controlling the position of the focusing lens in the lens barrel, the

retaining member comprising a ratchet side;
a first driving device for urging the retaining
member to rotate in a first direction;
a second driving device for providing a urging force
5 for the retaining member to rotate in a second
direction, wherein the first direction is a
reverse direction of the second direction; and
a retaining hook¹ for positioning and engaging with
the retaining member when the retaining member
10 rotates to a predetermined position in the first
direction so as to resist the urging force
provided by the second driving device that makes
the retaining member rotate in the second
direction.

15

10. (Amended) The lens retaining device according to
claim 9, wherein the ratchet side [is arch-wise shaped
and] has a plurality of ratchets thereof, and wherein
the plurality of ratchets provide a plurality of
20 positioning status for the focusing lens.

12. (Amended) The lens retaining device according to
claim 10, wherein the retaining member [has a arch-wise
shaped section] is arc-shaped, and the ratchet side
25 is disposed on one side of the [arch-wise shaped section]
retaining member, and wherein the ratchet side
comprises a first end and a second end.

14. (Amended) The lens retaining device according to
30 claim 12, wherein the a smooth side is disposed on the
other side of the [arch-wise shaped section] retaining
member, and when the vertical end of the retaining hook

slides along the ratchet side passing the second end,
the vertical end slides to the smooth side and the second
driving device urges the retaining member to rotate
in the second direction.

5

Sincerely yours,

10

Winston Hsu

Date:

2/26/2003

Winston Hsu, Patent Agent No.41,526

P.O. BOX 506

Merrifield, VA 22116

U.S.A.

15

e-mail:winstonhsu@naipo.com.tw